With two zeros in column 2,we choose to expand about that column (acronymref/theorem/DEC)

Con dos ceros en la columna 2, elegimos expandir con respecto a esa columna

$$\text{Det (A)}= \begin{vmatrix} 2 & 0 & 3 & 2 \\ 5 & 1 & 2 & 4 \\ 3 & 0 & 1 & 2 \\ 5 & 3 & 2 & 1 \end{vmatrix}$$

$$=0\ (\ -\ 1) \begin{vmatrix} 5 & 2 & 1 \\ 3 & 1 & 2 \\ 5 & 2 & 1 \end{vmatrix} + 1(1) \begin{vmatrix} 2 & 3 & 2 \\ 3 & 1 & 2 \\ 5 & 2 & 1 \end{vmatrix} + 0(\ -\ 1) \begin{vmatrix} 2 & 3 & 2 \\ 5 & 2 & 4 \\ 5 & 2 & 1 \end{vmatrix} + 3(1) \begin{vmatrix} 2 & 3 & 2 \\ 5 & 2 & 4 \\ 3 & 1 & 2 \end{vmatrix}$$

$$=(1)(2(1(1)\ -\ 2(2)\ -\ 3\ (3(1)\text{-}5(2)\ +\ 2(3(2)\text{-}5(1)))\ +$$

$$(3)\ (2(2(2)\ -\ 4(1)\ -\ 3(5(2)\ -\ 4(3)))\ +\ 2(5(1)\ -\ 3(2)))$$

$$=\ (-\ 6\ +\ 21\ +2)\ +\ (3)(0\ +6\ -\ 2)\ =\ 29$$